



Troubleshooting Guide

Australian/ NZ Edition

IntelliFire Plus Ignition System

**For Authorized Gas Technicians and
Service Personnel Only*

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Use of this Guide

This troubleshooting guide provides an overview of the IntelliFire Plus system, reviews problem scenarios, provides a system's checklist and frequently asked questions.

The purpose of this guides is to provide a tool:

- To educate
- To aid in proper diagnosis for accurate parts replacement
- To reduce multiple service calls
- To gather necessary information to assist with proper diagnosis of problems

Qualified Service Technicians Only

This troubleshooting guide is for use by qualified service technicians only. It is designed to help qualified service technicians troubleshoot gas fireplace with IntelliFire Plus ignition systems.

Warning: Do not attempt to service appliances which you are not qualified to service. Service attempted by unqualified persons could result in risk of bodily injury and property damage.

Obligation of Service Professionals

Service technicians must be attentive to appropriate codes, understand and follow manufacturer's installation instructions, and use the proper parts and materials when servicing and installing gas appliances. One of the most important tools you bring to a service call is the installation manual.

Communicating with the Owner

Ask the owner a few simple questions prior to service:

- Has What are the symptoms?
- When does the problem occur?
- How long has the appliance been installed?
- Model Number
- Serial Number
- Operating Gas—P, N or B


Technical Assistance—Distributors & Dealers

Be prepared to provide the following information when contacting Hearth and Home Technologies:

- Fireplace model and serial number
- Previous service history if with previous HHT reference number, if any
- Detailed problem description

Technical Service will assign a reference number to troubleshooting calls when information is provided. To ensure a more timely repair and processing of claims involving multiple service calls, HHT expects a dealer to contact Technical Service after 2 failed attempts to repair a product. A completed checklist may be requested to assist with diagnosis.

07/22/09 01:37 PM CDT via VSI-FAX Page 1 of 1 #3544896

 HEARTH & HOME technologies	Claim System Acknowledgement
[HHT Cust Number] FHH-RICHMOND, VA 2227 DAENEY RD. RICHMOND, VA 23230 US	Reference Number: 1369359 Date Entered: 09-30-08 Technician: Curt Marx Claim Status: Open Approval Status: Approved

Recording the reference number improves communication between dealer and HHT. This number is also used when and if a warranty claim is filed for the service call.

You will need the following tools and equipment to execute troubleshooting outlined in this guide.

Required Tools:

- Open end wrenchs, 3/8", 7/16", 9/16"
- Adjustable end wrenches: 8" and 10"
- 1/4", 5/16" nut driver
- Straight screwdrivers (including small 1/8" blade) for pressure check and stubby straight.
- Phillips screwdrivers #1 and #2 and stubby Phillips
- Plastic straight screwdriver (Rhino style)
- Electrical pliers
- Needle nose pliers
- Flashlight
- Numbered drill index
- T-20 tamper resistant Torx bit HHT part #810-225
- Soft-bristle toothbrush
- Soft 1" paint brush
- Electric drill 1/4" - 3/8"
- Fine Steel Wool (Pilot Cleaning)
- Digital Volt Meter

Required Testing Equipment:

- Multi-meter (must measure millivolts)
- Manometer
- Leak detection fluid
- 2 to 4, "300 mm—350 mm" jumper wires
- "flame stick" lighter wand

Miscellaneous:

- Smoke Match
- Drop Cloth/Tarp
- Glass cleaner/towels
- Vacuum
- Personal Protection Equipment
- Gas leak detector

ALL TOOLS AND TEST EQUIPMENT
SHOULD BE PROPERLY STORED AND
MAINTAINED.

The IntelliFire Plus IPI (intermittent pilot ignition) Ignition System and Wireless Controls is a total control system, comprised of components under the fireplace to the remote control in your hand. HHT Hearthville offers Sales and Product Knowledge Training modules as companions to this troubleshooting guide. Taking Hearthville modules is recommended. Information is also readily available at heatnglo.com.

Ignition Control Components

- Ignition Control Box (8k1-CE)
- 240V to 6 DC Volt DC regulator power adapter
- Wiring Harness
- IPI Valve with Stepper Motor (or Single rate fixed with XLR)
- IPI pilot assembly
- Battery Backup (C battery, unit specific)
- Auxiliary component box (Aux300CE)

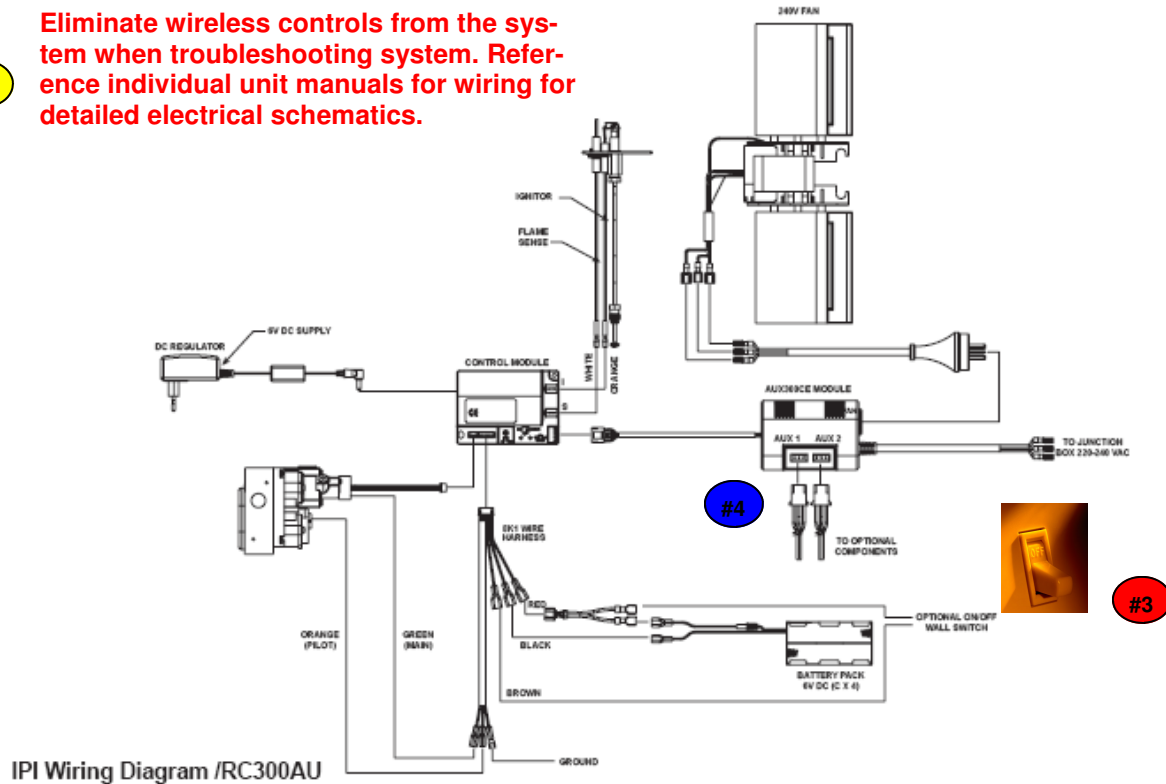
Wireless Controls*

- RC300 AU wireless controls w/ batteries and docking wall mount
- RC100 wireless wall switch (Not recommended for units with fan)

* This guide assumes the wireless controls and battery backup components have been eliminated from the system for purposes of troubleshooting the ignition system.

#2

Eliminate wireless controls from the system when troubleshooting system. Reference individual unit manuals for wiring for detailed electrical schematics.



#1

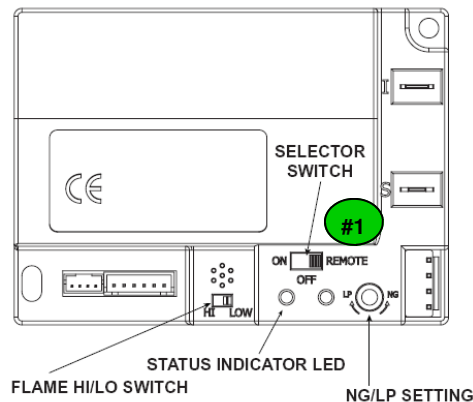
ON/OFF/REMOTE switch on module must be in REMOTE position for wireless controls to enable use of the remote and optional wired wall switch.

#2

The wireless control and receiver (housed in the control module) communicate to and from each component via radio frequency. They must remain within **30** feet of each other.

#3

If a wired wall switch is installed and in the ON position, it will override the commands of the wireless controls. Must be OFF to use remote. User can still operate auxiliary functions (Heat Zone).



#4

AUX300CE module controls the FAN and incorporates timer and rheostat functionality.

AUX300CE module also controls 2 auxiliary functions.

AUX1 offers high/med/low settings
AUX2 offers ON/OFF control.

IPI Ignition Control Module (see labeled diagram below) w/ remote receiver

1—Igniter sparks when commanded via wall switch, wireless control or control module switch to turn on main burner. Voltage through the wire to igniter on pilot assembly creates spark to ignite gas released to pilot assembly.

2—Sensor rod acknowledges pilot flame is present before releasing gas to the main burner for ignition. When a pilot flame engulfs the sensor rod it conducts electrical current from the sensor through the flame to ground in one direction, which acts as a switch to the control module at this connection. Gas flows to the main burner 4-8 seconds after continuity happens via flame rectification.

3—Sends commands from the wireless controls to the AUX modules, controlling fan kits (AUX module) and 2 additional auxiliary functions.

4—Fuel setting is factory set, but must be adjusted if fireplace is converted. Switch does not regulate gas pressure to valve, but it does allow for appropriate variability settings for flame modulation. Take care when adjusting this switch. We recommend using a small, straight ceramic/anti-static screwdriver, which is supplied by electrical supply companies.

5—Learn Button is used to program up to 3 wireless controls to fireplace. Instructions provided in controls instructions.

6—Diagnostic light assists with troubleshooting. Error code chart provided later in this guide.

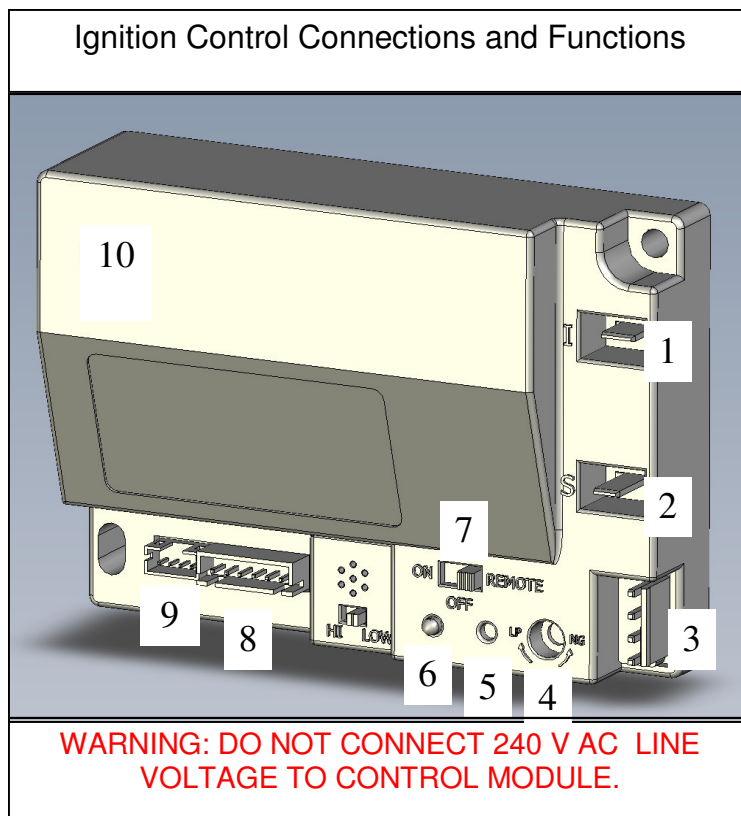
7—ON/OFF/REMOTE Switch

8—Power from battery pack, wall switch connection, and connection to valve pilot and burner regulators.

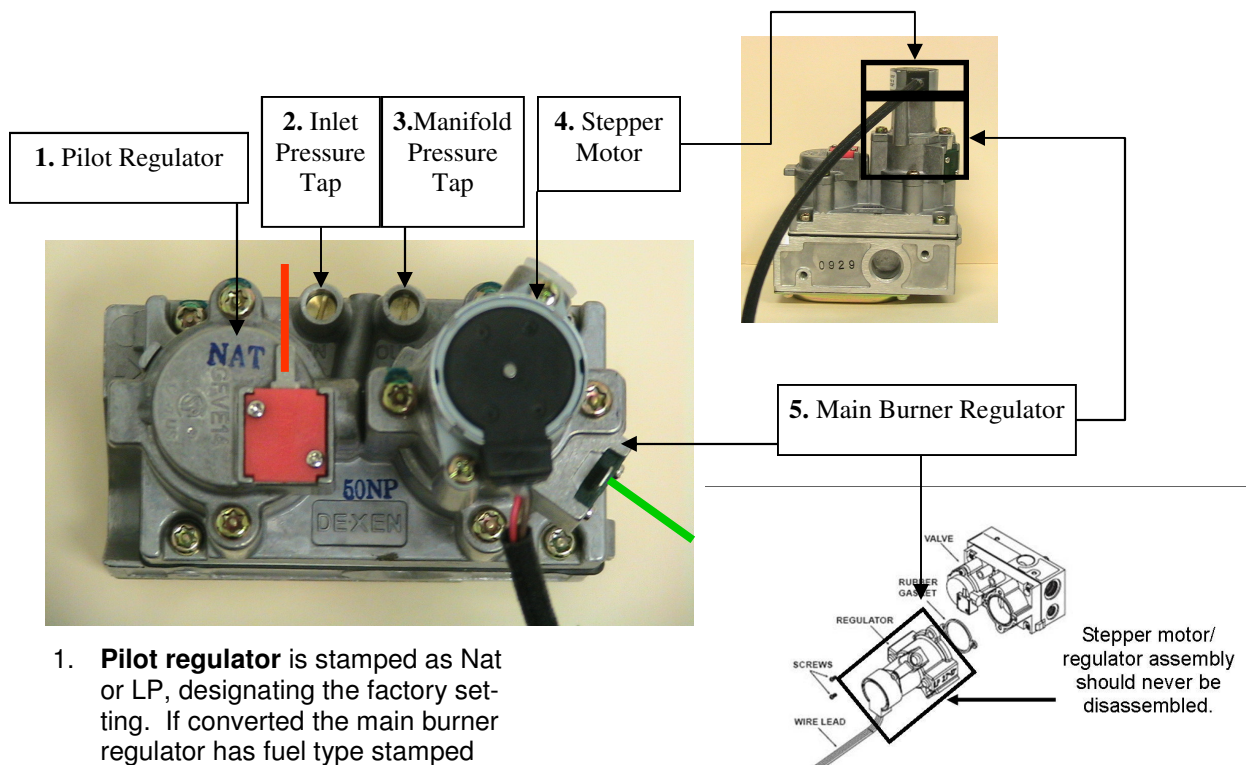
9—Flame Modulation (stepper motor) connection

10—Power supply connection. 6 volt regulated DC from power regulator. Plugged in to junction box.

11— Rectification: When the pilot flame bridges the sensor rod and ground, a signal is generated at the module that enables the valve to turn the main burner solenoid on.



IPI Gas Valve w/ Stepper Motor



1. **Pilot regulator** is stamped as Nat or LP, designating the factory setting. If converted the main burner regulator has fuel type stamped along the side, indicating the conversion. The **orange** wire from the ignition module is connected to the pilot regulator.
2. Test the **inlet pressure** at this tap.
3. Test the **manifold pressure** at this tap.
4. The **stepper motor** is not a replaceable as a separate part, only available assembled to the main burner regulator. It's function is to modulate the flame.

*** Note: An audible noise will be heard when the stepper motor is modulating flame during flame adjustment, in thermostat mode and when flame is turned off. ***

5. **Main burner regulator** is changed when unit is converted and comes with stepper motor installed. The **green** wire from the ignition module is connected to the main burner regulator.

Important gas supply information provided in HHT gas fireplace Owner's Manual, Installation and Operation.

DANGER !

A gas supply regulator must be installed in line with the gas supply to the valve if pressure supply line is above 3.4 kPa. If not, the diaphragm in the valve will start to pulsate and damage valve.

Normal operating pressures:

Inlet: 1.13 kPa for natural gas
2.75 kPa for propane/butane gas

Manifold: .8 kPa for natural gas
2.4 kPa for propane/butane gas

Part Name	Part Number
IPI Plus Valves	
Variable N (30%)	2166-302
Variable P (30%)	2166-303
Fixed NG (XLR only)	2166-308
B&P Fixed (XLR only)	2166-309
Valve Regulator Assembly	
Variable N	NGK-DXV-50
Variable P	LPK-DXV-50
Fixed N (XLR only)	NGK-DXF-NP
Fixed P (XLR only)	LPK-DXF-NP
Pilot Assembly	
Natural	2198-014
Propane / Butane	2198-015
Natural (XLR only)	2090-012
Propane/ Butane (XLR only)	2090-013

IPI Plus Controls Components	
Remote Control Australia (No standby pilot)	REM300-HNG-AU
Power cord replacement for 2078-027 Junction box	2099-161
Fuse Harness (Cosmo and Supreme Units for Fan)	2166-341
Aux300CE (auxiliary box)	2166-340
Control Module (Gray)	2166-306
Jumper wire GFK-240V fan to Aux300CE	2166-375
Battery Backup (C batteries)	4067-223
Wiring Harness	2166-304
Blower assembly kit (350,550, 6000, ST, Vrtkl, XLR)	GFK-240V
Blower assembly kit low profile (Supreme-I30, Cosmo-I30, Soho)	GFK210-240V
DC power voltage regulator	2166-369
DC power voltage regulator (Inserts) (2 prong flat spade)	2166-305
Junction power box	2078-027
Junction power cord	2222-374
Jumper wire for Heat Zone connect to Aux box	2166-191

RC100 control



Main Components of Wireless Controls

RC100—Wireless wall mounted control. On/off capability only.

RC300AU— Handheld remote control with wall mount holder. Thermostat, timer, Aux 1, Aux 2, and blower control.

See instructions on RC300AU and RC100 for programming and function control.

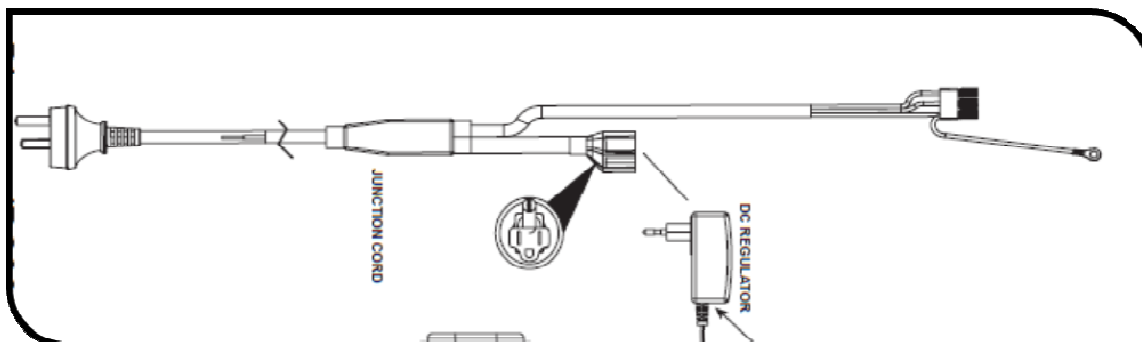
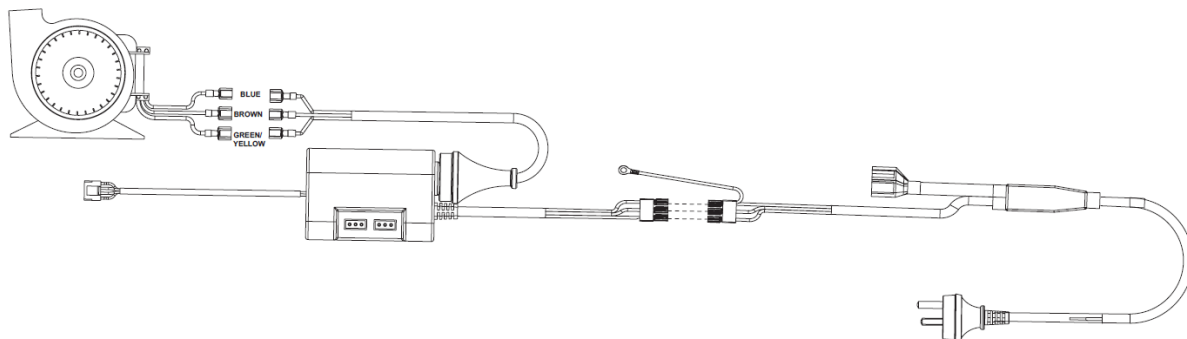
RC300AU Remote Control



AUX300CE

2166-340

The Aux300CE is not needed for remote control operation, but it is needed for blower connection and control of the blower through the module. The remote interfaces with the gray module which controls functions on the Aux300CE.



Note: Pictured is the junction power cord. If you have an existing 2078-027 junction box and are experiencing electrical connection issues with the socket of the junction box, please contact your dealer for a replacement junction power cord.

Troubleshooting Checklist:

Going into a service call with a conclusion prior to checking the complete system can lead to replacing unnecessary parts, multiple service calls and wasted time and money for you and the customer. When servicing any Heat & Glo product, the root cause of the problem should be identified. This will lead to confidence and ease of diagnosing problems in future service calls.

Using the troubleshooting checklist to assist in your service call. This will...

- Enhance consumer confidence
- Provide consistent service performance
- Provides unit history for future service calls
- Improves communication when seeking technical assistance

Checklist:

- Gas Supply
 - Gas shutoff is in ON position
 - Assure proper gas sizing of line. How many appliance are operating on line?
 - Meets standards of AS5601 plumbing code

Standard Inlet and Outlet Gas Pressures

	Natural Gas	Propane
Inlet Gas Pressure	1.13 - 3.40 kPa	2.75 - 3.40 kPa
Outlet (Manifold) Gas Pressure	.80 - .95 kPa	2.36 - 2.61 kPa

- Visual Inspection for proper installation and condition of installation
- Does the vent configuration comply with approved venting diagrams for the unit?
 - Proper vent cap and clearances
 - Proper rise to run ratio of venting
 - All flue components connected and secured
- Electrical supply and components
 - Proper position of On/off switches
 - Isolation switch installed and ON
 - Remote control batteries are good
 - Power to junction box and valve, firebox, control module connected to earth ground
 - Power to Ignition module
 - Module switch is in the "Remote" position
 - No wires are compromised and all connections secure and made
 - Wire harness from module to valve
 - Wire harness from Aux to module
 - Pilot wires to proper module terminals I and S
 - Green and orange leads from module harness to valve
 - Ground wire secure
- Documentation
 - Serial number
 - Problem and resolution and how determined
 - Parts kept for return to dealer with paper work

IntelliFire Plus Troubleshooting

Problem: Pilot won't light, no noise and no spark*

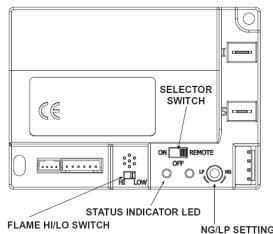
Possible reasons:

1. Control Module selector switch NOT set properly.
2. Loose or improper wiring. System not grounded
3. No power to or from junction box
4. No power from 6Volt DC transformer
5. Wired wall switch not wired properly.
6. LP/NG switch on module damaged or not fully engaged into LP or NG setting.
7. Continuity issue. Spark gap or object interference.
8. Faulty module

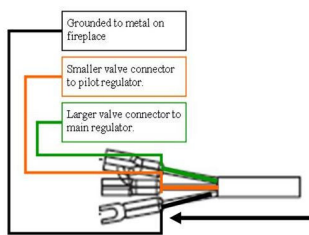
** Notice **

- Disconnect power to the system prior to disconnecting any components by switching the ON/OFF/REMOTE module switch to the OFF position.
- It is not recommended to operate the ignition control module with disconnected wire connections. A disconnection of the ignition lead can cause a short and permanent control module damage.
- Introducing the pilot sensor rod with a false flame, such as from a flame stick, will cause the module to go into lock-out mode. This is due to a safety feature built in to the module.

- 1** Control Module selector switch NOT set properly. **The module must be in the ON or REMOTE setting for unit to operate. Isolate remote from system when troubleshooting. Switch module to ON or REMOTE to test operation of unit.**



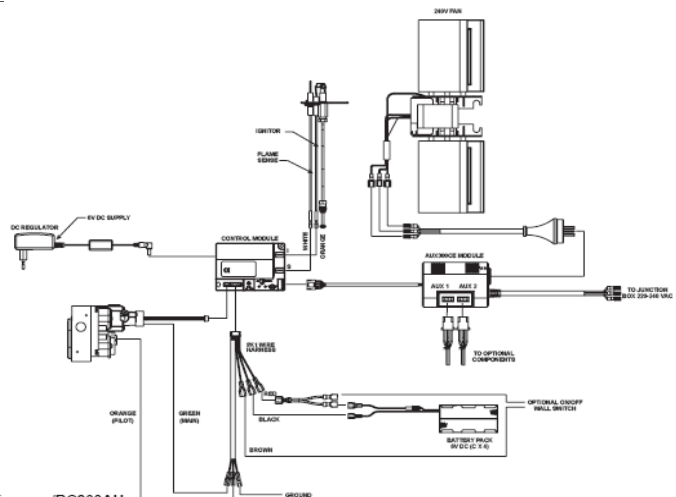
- 2** Loose or improper wiring. System not grounded. **Verify all wire connections.**



The black wire, grouped with the orange and green wire is the ground wire. Make sure it tightly secured to metal chassis of fireplace.

Verify that the ground wire, igniter wire, and sensor wire are all in tact and have continuity. A pinch or splice in the wires can cause a short to the system or a break in continuity and cause the module to go immediately in to lock-out mode.

IPI Wiring Diagram /RC300AU



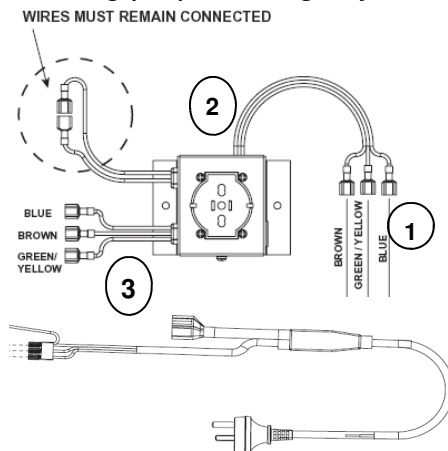
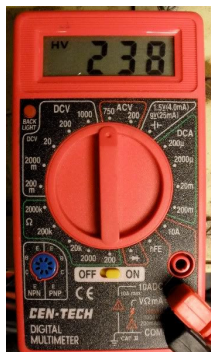
** Use a DVM (digital volt meter) to test for system ground/earth connection. Set meter to resistance (ohms) or audible diode test. Connect red lead to the pilot assembly **orange** lead and the black meter lead to the **black** earth lead on control module. Resistance should be almost zero or provide an audible beep.

* Troubleshooting assumes the wireless controls & battery backup have been eliminated from the system.

Problem: Pilot won't light, no noise and no spark ***3****No power to junction box or from junction box.**

NOTICE: The mains supply to the appliance must have isolation of a minimum 3 mm contact separation in both poles.

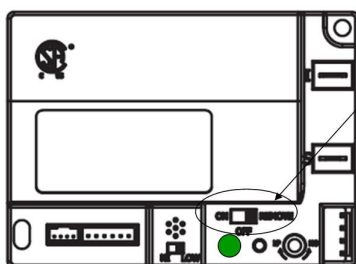
If there is no power from junction box, trace electrical supply to junction box including proper wiring at junction box.



1. Assure power cord is attached within the junction box.
2. Verify black leads are connected . These are unused in new IPI plus system.
3. Check voltage by connecting voltage tester to Brown (hot) and Blue (hot). Reading should be 220-240V.

4**No power from 6 volt DC transformer**

- Check to assure 6 Volt adapter is secure in junction box.



Switch from OFF to ON. If diagnostic light blinks green 3 times there is power to the module.

If the module does not flash, trace power supply to junction box, from junction box and from 6 Volt transformer.

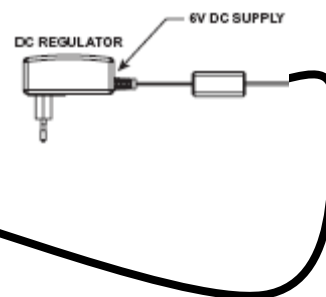
Pulling and re-connecting the power supply cord from transformer does not serve as the same test as turning switch from OFF to ON.



With transformer plugged into junction box, pull transformer power supply cord from module.

Insert red probe inside cord.

Touch black probe to outside of power supply



Testing 6 Volts DC from transformer

The DC regulator converts 220/240 volts AC to 6 volts DC. Check to assure that your electrical meter is set to measure DC. If you get a minimum of 6 volts DC from adapter, the adapter is good.

* Troubleshooting assumes the wireless controls & battery backup have been eliminated from the system.

Problem: Pilot won't light, no noise and no spark ***5** Wired wall switch not wired properly.

The wiring to the wall switch may not be correct if fireplace does not turn on when the switch on the module is in the REMOTE position.

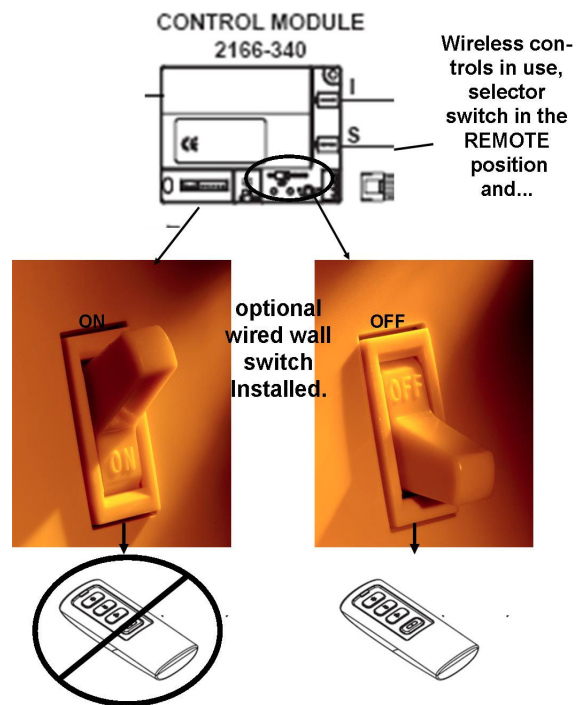
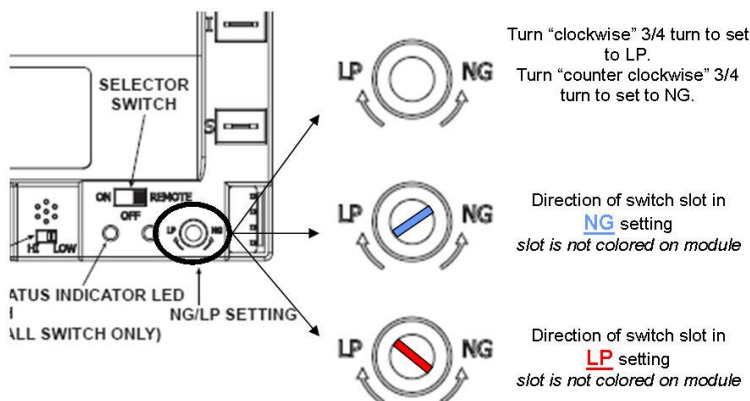
AND....the optional wired wall switch is in the ON position.

Red and Brown wire connect to wall switch.

Diagram to the right reviews proper switch operation when wired wall switch and wireless controls are both installed.

NOTICE: In the instance where the fireplace is off because it has been set with the RC300 to operate in thermostat mode and the fireplace is turned on with the wall switch, the fireplace will turn on. However, when the remote attempts to signal a command to shut off the fireplace because it has reached the thermostat set point, the fireplace will shut the unit off and go in to lock-out mode. This is rare, but to avoid, assure remote is out of thermostat mode before turning fireplace on with wall switch.

Disconnect wall switch wires and turn on unit with the sliding switch on top of the module. If unit lights with module, then verify wall switch connections.

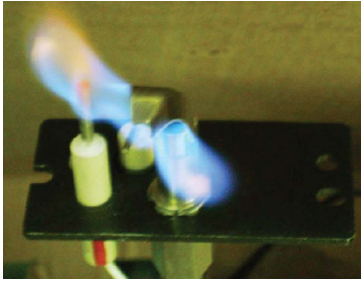
**6**

If the NG/LP selector switch is not turned completely to NG or LP setting, the fireplace will not ignite and will go into lockout mode.

If the selector switch spins freely and does not engage into NG or LP position the switch is damaged and the module go into lockout mode. Damaged switch requires module replacement.

Selector switch must turn all the way until it stops. Do not turn too far as it will break the switch.

* Troubleshooting assumes the wireless controls & battery backup have been eliminated from the system.

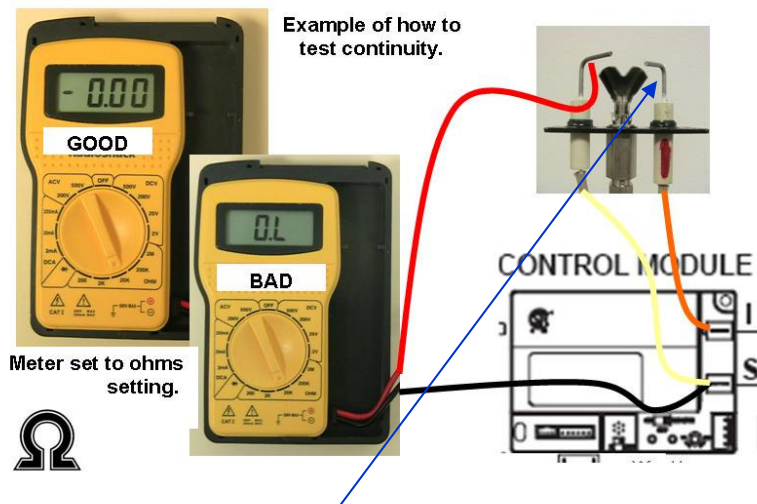
Problem: Pilot wont' light, no noise and no spark ***7****Continuity issue. Spark gap or object interference.**

Check to assure pilot spark lead and sensor rod are intact. Verify that neither the sensor or igniter rod are contacting the pilot hood assembly.

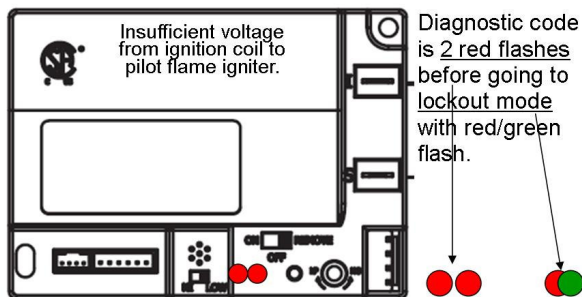
Assure that ceramic insulator of sensor rod is not cracked or broken.

Make sure that there is no media or excess carbon build up on sensor lead. This can cause a "false" sense situation and put the module in to lock-out. Remove any debris or objects that are in contact with the sensor or spark leads.

Test for Continuity of the system as shown. Make connections as shown and set meter for Ohms setting. If there is BAD reading, check wiring of system. If all wiring is intact, replace pilot assembly and retest for continuity.



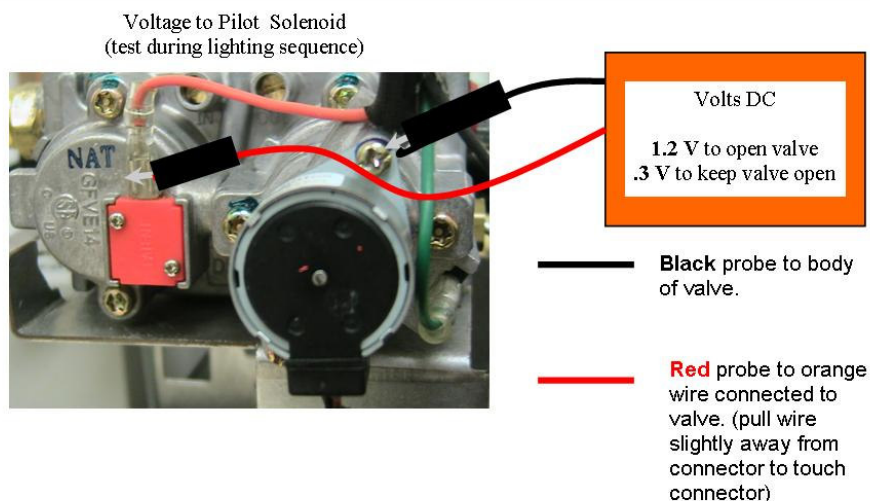
****Spark Gap between hood and igniter should be .115" or 2.92 mm (+/- .015" or .38 mm)**

8**Faulty Module**

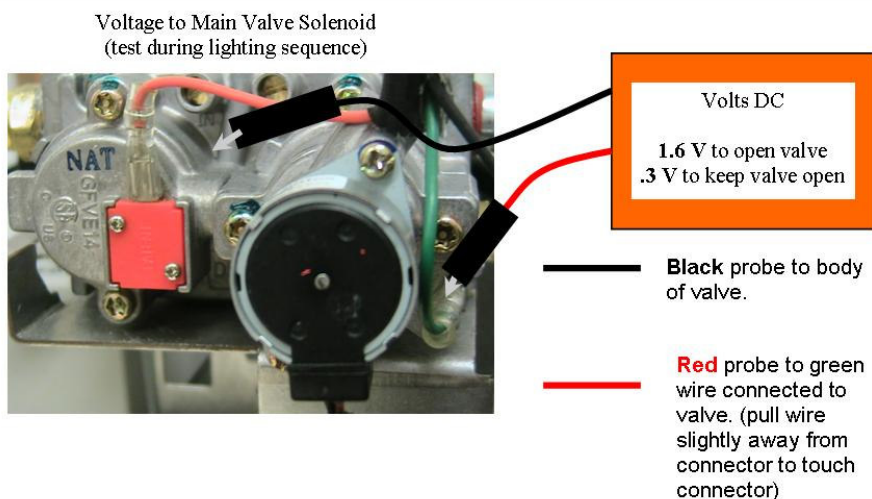
2 red flashes does not designate the module as bad, it states that there is insufficient voltage from the ignition coil to pilot flame igniter. Verify system voltages from module before replacing module.

* Troubleshooting assumes the wireless controls & battery backup have been eliminated from the system.

Check voltage from module to valve PILOT solenoid. Pull back wire shield of orange wire and connect red meter probe to orange lead of valve. Connect black meter probe to valve body as shown. Turn system on to start lighting sequence. There should be 1.2 volts to 3 volts running through orange lead from module. If there is not, then the module is bad or the wiring harness is compromised. Replace wiring harness and then module.



If the pilot lights but the burner will not, check voltage from module to MAIN VALVE solenoid. Pull back wire shield of green wire and connect red meter probe to green lead of valve. Connect black meter probe to valve body as shown. Turn system on to start lighting sequence. There should be 1.2 volts to 3 volts running through orange lead from module. If there is not, then the module is bad or the wiring harness is compromised. Replace wiring harness and then module.



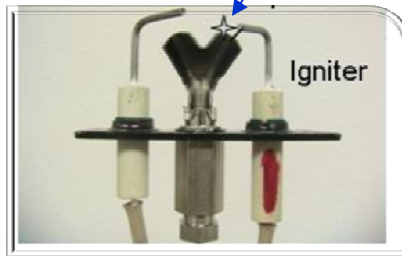
Make sure orange and green female terminals do not have the protective rubber sleeve pulled away. This could potentially short the leads to the valve (which is grounded).

Problem: The module makes sparking noise, but no spark * **

2 Reference prior troubleshooting steps:

Loose or improper wiring. Check that igniter is not disconnected, loose, or shorted to fireplace.

7 Continuity or earth issue. Spark gap. There should be about a **2.92 mm (.118") gap** from igniter to pilot hood. Verify sensor lead wire. Check that pilot shares ground with valve.



If there is no pilot light after 60 seconds or igniter is shorted and attempts to light for 60 seconds, then the module will go in to lock-out.

It will flash green 3 times and go into lockout.

Voltage shorted to ground may cause damage to

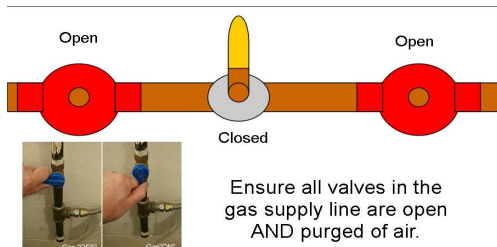
**** Notice ****

- Disconnect power to the system prior to disconnecting any components by switching the ON/OFF/REMOTE module switch to the OFF position.
- It is not recommended to operate the ignition control module with disconnected wire connections. A disconnection of the ignition lead can cause a short and permanent control module damage.
- Introducing the pilot sensor rod with a false flame, such as from a flame stick, will cause the module to go into lock-out mode. This is due to a safety feature built in to the module.

Note: If the module cycles through the lighting cycle without igniting the appliance, it could be a symptom of too large of an igniter gap.

9 Additional:

Verify gas flow to valve and air bled out of line. Also assure proper appliance gas line sizing. Pressure loss occurs when too many appliances are on one gas line, gas line undersized, or distance from meter to appliance is excessive. If there is a sputtering sound and intermittent pilot lighting, the gas line may be undersized or there is air in the gas line. Again, the module will lock-out after 60 seconds of no lighting. Reset module.



Verify that the appliance gas shut off valve and any other appliance shut off valves are on.

Verify that there is a gas regulator installed before the valve for any gas supply that exceeds 3.4 kPa.

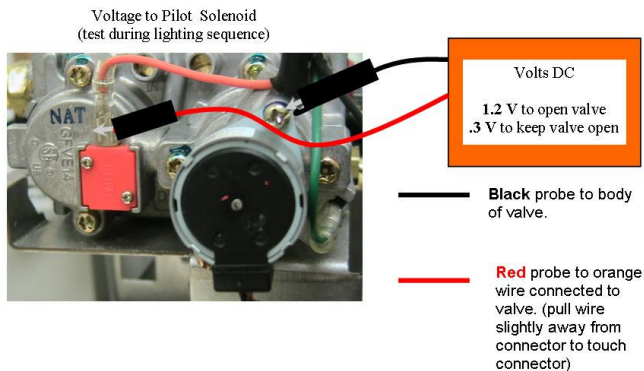
At pressures above this, the valve will start to pulsate. Proper inlet and manifold gas pressures are in each gas appliance manual. Reference Australian Plumbers Code AS5601 for additional codes and regulations. The valve is non-adjustable and is preset at the factory. The following are the standard inlet and outlet pressures for the variable valve.

	Natural Gas	Propane
Inlet Gas Pressure	1.13 - 3.40 kPa	2.75 - 3.40 kPa
Outlet (Manifold) Gas Pressure	.80 - .95 kPa	2.36 - 2.61 kPa

Problem: Pilot sparks, but pilot will not light.**Reference prior troubleshooting steps:**

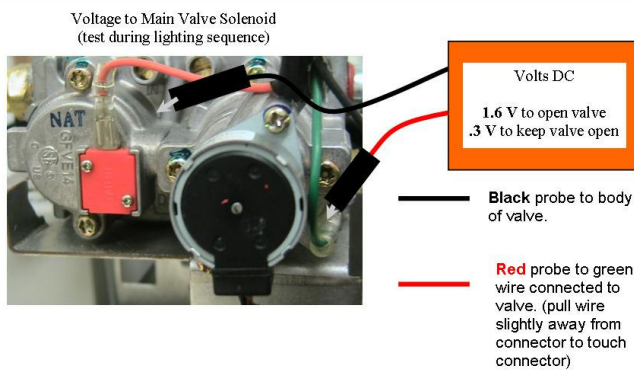
- 9 Gas supply
- 8 Faulty module
- 10 Faulty valve

Check voltage from module to valve PILOT solenoid. Pull back wire shield of orange wire and connect red meter probe to orange lead of valve. Connect black meter probe to valve body as shown. Turn system on to start lighting sequence. There should be 1.2 volts to 3 volts running through orange lead from module. If there is appropriate voltage to orange solenoid of valve, then the valve is bad or the wiring harness is compromised. Replace



The voltage reading will start at 1.2 volts for the first couple seconds and then drops voltage down to low setting. As long as start voltage is at least 1.2 volts and it maintains .3 volts to keep the valve open, then the pilot solenoid is good.

If the pilot lights but the burner will not, check voltage from module to MAIN VALVE solenoid. Pull back wire shield of green wire and connect red meter probe to green lead of valve. Connect black meter probe to valve body as shown. Turn system on to start lighting sequence. There should be 1.2 volts to 3 volts running through orange lead from module. If there is appropriate voltage to green solenoid of valve, then the valve is bad or the wiring harness is compromised. Replace wiring harness and then module.



The voltage reading will start at 1.6 volts for the first couple seconds and then drops voltage down to low setting. As long as start voltage is at least 1.6 volts and it maintains .3 volts to keep the valve open, then the main valve solenoid is good.

Problem: Pilot lights, but continues to spark and main burner will not ignite.

Reference prior troubleshooting steps:

- 7 Continuity or earth/ground issue.
- 9 Gas Supply.
- 2 Loose or improper wiring.
- 10 Faulty Valve.

NOTE: Revision A module is more susceptible to pilot rectification issues. Please notify dealer of revision module that you have.

Problem: Pilot lights, stops sparking, and pilot remains lit. Burner will not light.

Reference prior troubleshooting steps:

- 8 Faulty Module.
- 10 Faulty Valve.
- 2 Loose or improper wiring. Specifically the green wire.

Note: It is possible that the green wire is shorted to valve ground.

Measuring Pilot Rectification Current

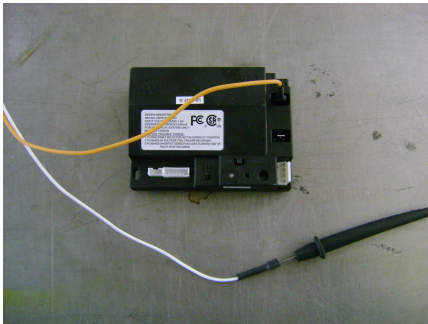
Notes: It is possible to determine if the system is meeting the rectification threshold that is generated by the pilot assembly. If the rectification threshold, there a number of possible reasons. Please follow the steps to determine if there is a rectification issue.

You will need a Multimeter that is capable of measuring μA (DC) with a resolution of $0.01 \mu\text{A}$. All design and validation work at HHT is performed with the Fluke 189 multimeter, or equivalent. A Fluke 189 multimeter is highly recommended. A low grade multimeter will not work to test flame sense due to the level of sensitivity of measurement.

The rectification, or sense current, occurs as direct (DC) current. Some 8K-1 control modules will not accept a multimeter in series with the flame sense circuit. Turning the unit to ON mode with the meter in series will cause the 8K-1 to detect an unsafe condition and go into lockout mode. Following this procedure will prevent this occurrence.

Procedure:

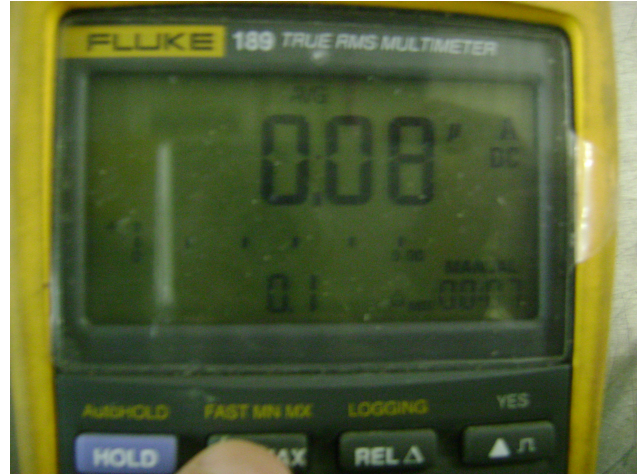
1. Disconnect the green wire from the valve. This will cause the system to operating the pilot independent of the main burner. The is important to fully evaluate the pilot rectification.
2. Disconnect white pilot sense lead from the control module. Connect the wire terminal to the black negative lead on the multimeter.



- 3.) Prepare the red positive lead of the multimeter so it can be quickly connected to the male sense terminal on the control module. An alligator clip is required for this connection.
- 4.) Turn unit ON, preferably with the selector switch on the module for optimal control.
- 5.) Immediately connect the red/positive lead from the multimeter to the sense spade terminal on the control module.



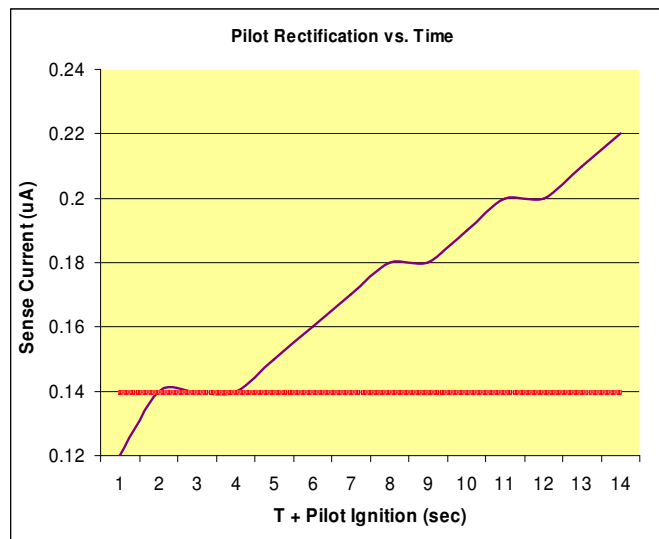
- 6.) Immediately, turn the multimeter ON and to μA (DC). When using a Fluke 189, **immediately** press the MIN/MAX button three times so the meter will display the rolling average sense current. Monitoring the average value will help cancel out the variation in the actual sense current flow. The average value is similar to what the control module software recognizes.



Record the μA average value vs. time. For example, record the value at 10 sec intervals from immediate pilot ignition until 60 sec. An example of a data log would look like this:

Time	μA (Average)
10	0.13
20	0.17
30	0.19
40	0.2
50	0.21
60	0.22

- 8.) The 8K-1 module requirement for rectification ranges from 0.11 to 0.14 μA . The 6K (green IPI) module requires 0.44-0.55 μA . Once this requirement is met for a sufficient time, the pilot should stop sparking and the module should send DC voltage to the green wire to energize the main valve. A typical current vs. time plot would look like the following graph.

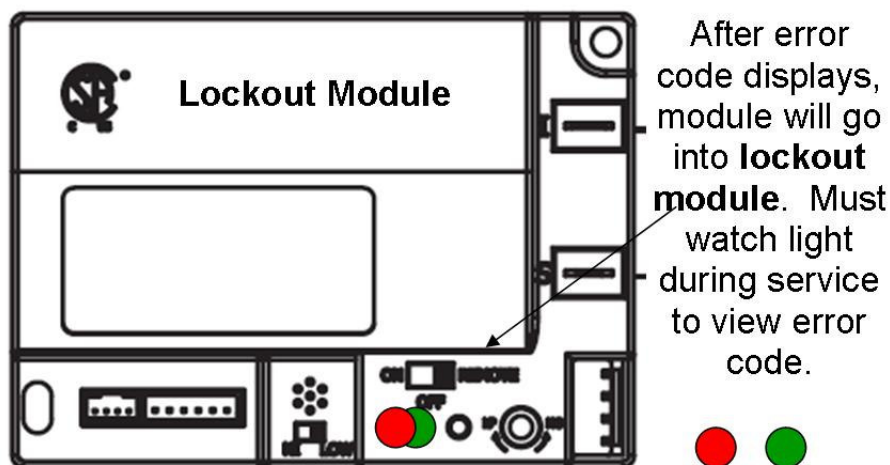


Troubleshooting Pilot Rectification Issues:

- 1.) If the pilot sense current does not achieve a stable average 0.11 to 0.14 μA during the initial 30 sec of the pilot being ignited, then the current flow at the pilot may be impaired.
 - A. Clean the pilot sense rod, ground rod, and/or hood to ensure any contamination or oxidation is minimized. This should increase the rate of current flow increase and help it attain a higher value. In controlled laboratory tests, cleaning the initial oxidative layer that forms on the pilot will restore long-term pilot function.
 - B. Verify that gas inlet pressure is within rating plate specifications. This must be verified while the pilot and main burner are operating, and preferable when other gas appliances on the same gas inlet are operating.
 - C. The pilot may be altered or damaged. Check to make sure the igniter electrode is not bent .
 - D. Verify that the sense rod is not bent up or back out of the flame.
 - E. Check for a normal and stable flame at the pilot burner to ensure that the flame is projecting from the hood to the sense rod consistently. The pilot flame should ignite and extinguish within 1 second of full fuel delivery. If it ignites or extinguishes slowly, the gas valve may be defective. If the flame is weak, despite adequate gas inlet pressure, there may be contamination in the orifice, a damaged hood, malfunctioning valve, etc.
 - F. If A thru E do not apply, replace the pilot assembly. If replacing the pilot resolves the failure, send the failed module with notes on the failure to your distributor.
- 2.) If the pilot sense current exceeds 0.14 μA during the initial 30 seconds of the pilot being ignited, then the current flow at the pilot may be impaired.
 - A. Check for a shorted or damaged sense lead, both inside and outside the firebox. This would include melted insulation on the sense lead within the firebox, and also any pinched or damaged wire elsewhere
 - B. Verify that the ceramic insulator, hood, or sense rod is not contaminated with soot. This will cause a short in the sense circuit, resulting in the same failure symptoms as a “bad” pilot. If soot is contaminating the pilot, an abnormal condition may exist warranting review of the entire installation.
 - C. Verify that ceramic insulator is not cracked, damaged, or loose. A damaged insulator will cause a short, which is sometimes intermittent.
 - D. If A thru C do not apply, replace the control module. If replacing the control module resolves the failure, send the failed module with notes on the failure to your local distributor.


Diagnostic Codes are listed below and should be used as a additional tool to help diagnose failure modes. Use the troubleshooting guide to check all possible failures before changing any component parts.

CODE	RESPONSE	ERROR CAUSE	ERROR RESOLUTION
1 Flash	Module flashes error code and goes into lockout mode.	<ol style="list-style-type: none"> 1. Fuel-type selector in incorrect position 2. Fuel-type selector switch damaged 	<ol style="list-style-type: none"> 1. Verify that the selector stops at the correct position when rotated gently with a precision screwdriver
2 Flash	Module flashes error code and goes into lockout mode.	Insufficient voltage from ignition coil to pilot flame igniter	Clear Lock-Out and attempt ignition. If condition persists, replace module
3 Flash	Pilot sparks and may ignite for up to 60 secs, but main will not open. If condition occurs for \geq 60 sec, module flashes error code, shuts down pilot, and goes into lockout mode	<ol style="list-style-type: none"> 1. Inadequate gas supply 2. False flame detected 3. Short in sense lead 4. Sense and/or igniter lead disconnected 	<ol style="list-style-type: none"> 1. Verify proper inlet pressure to the gas line 2. Verify that pilot leads are correctly terminated to the control module, and that no shorted wires exist. 3. Verify that the pilot sense rod, igniter rod, and hood are clean.



Error Code is not constant. It must be caught immediately or duplicated by testing the appliance and watching the module for the instant error code.

Visual Inspection

Area/System	Proper Readings/Reference Info/Items to be checked:	
Visual Inspection <i>Refer to appropriate installation and operation manual for all areas</i>		
1. Proper Installation/Condition		
a. Vent System	Does the installation meet venting requirements for... rise to run ratio? vent cap type? vent cap location? venting size?	
b. Gas Supply Components	Gas line sizing and components must meet ANSI Z223.1 and local codes requirements. Supply pipe must be 1/2" minimum. Note all appliances supplied inline with fireplace. Locate all shut off valves. What position are they in?	
c. Proper Clearances	Does the installation maintain proper clearances to... walls & ceiling? combustible mantels & surrounds? household goods and furniture?	
e. Glass Assembly	Is the glass... clean? free of soot? properly retained with all appropriate fasteners? gasket pliable and free of damage?	
f. Logs	Are the logs... appropriately placed? free of soot?	
g. Firebox		
h. Wiring/Ignition Components	Do the wiring connections and/or components show signs of... heat damage? loose or damaged wiring connections?	
i. Burner	Is the burner... set up with properly placed embers? free of corrosion? properly seated to the burner orifice? aligned with pilot igniter over burner ports?	

Make as many pertinent notes to the installation as possible. This will aid significantly in troubleshooting and diagnosing any future instances.

Ignition Control Module with control receiver

Q: What is the high to low turndown for the Intellifire Plus system?

A: The modules have the capability of regulating the gas pressure to the main burner with the manual High/Low switch. This allows the flame variability without the use of a wireless control. 2166-340 has a 30% turndown.

Q: If the fireplace is on and being operated via a wireless control, power is lost and there are batteries in the battery backup carriage do I need to switch the ON/OFF/REMOTE switch on the control module to ON?

A: As long as the batteries in the carriage have voltage the fireplace will seamlessly revert to the power from the batteries to power the operation. Fresh batteries will keep fireplace running up to 72 hours.

Q: Why is there an NG and LP switch on the module?

A: This allows a software alignment for control to the valve for the different fuel.

Q: Why do you need to disconnect power to system prior to disconnecting any components?

A: If the stepper motor has a disruption of power it will be stuck in the last position prior to lose of power. Properly disconnecting power will set a sequence to the stepper motor to start on high once powered again.

Q: Why is it not possible to field test the stepper motor?

A: There are 2 reasons. The pin connectors from the wiring harness to the module are very small and difficult to connect to multi-meter test probes. Complicated voltage sequence.

Q: Why does the unit make an unusual clicking noise when changing flame setting?

A: This is an audible response that the valve is changing flame height. There are 6 flame height settings and it is not always easy to distinguish the change in height.

Q: Why is there a fuse in the battery backup?

A: To meet CE and AGA requirements there must be a fail safe for surge or interrupt.

Q: Are the Intellifire and Intellifire Plus components interchangeable.

A: No.

System will always light on high flame when turned on.

Wall switch will always override remote. Wall switch needs to be off for remote operation.

There is a 10 second delay before any flame adjustment can be made. Once a remote has been programmed, there is no longer flame adjustment at module. Even if module selector switch is moved back to ON position, the only way gain manual functional control of the flame adjust is to clear the memory.

A module can be de-programmed by pressing the learn button of module and intentionally not depressing a button on the remote receiver within the learn time. If a remote does not pair with a module, it is necessary to repeat this step and clear the module memory and attempt to pair again.

5 second child lock on remote. The power button must be depressed for 5 seconds to "enable" the remote. This is a requirement of the testing and agency approval for multi-functional controls.

After you turn the fireplace off, the stepper motor will default back to the high flame position, then once the fireplace is turned back on it will light on high but after the 10 second delay it will resume the flame height position it was set to when turned off. Basically, always lights on high but will remember where you left it set to, and will return to that setting.

Aux 1 or 2 functions can be run at any time, with or without fire on, and there is no delay. There are 3 settings for Aux 1 and On/off control for Aux 2. The system will also remember what setting these were set to and will resume that setting when turned on each time. Heat zone can be connected to either.

The blower speed can be set at any time after turning fireplace on. However, there is a built in delay of 7 minutes from start up until it comes on, and also a 12 minute delay in which the blower will run after the fireplace is turned off. These settings were implemented to replicate the blower temp sensor disc that used to command the blower on and off according to firebox temperature.

There is a lock out mode. If pilot fails to light after a 60 second attempt, the module will go in to a lock out mode and will require a manual reset. No functions will work while in a lock out mode. The light on the module will signify the lock out status. It will be flashing, 2 flashes, one red and then one green. The module can be reset by sliding the switch on the top of module to the "off" position and then back to "remote" or by turning your appliance isolation switch off and then back on. Leave off for a short time.

The "on" position on top of the module will run the system if no remote or wall switch is installed. By sliding the switch to "on" the pilot and then the burner will light. A flame adjustment can also be made from the module using the "high/low" sliding switch. However, if a remote has already been programmed in to the system, this flame high/low switch becomes disabled. If a remote has not been programmed in, the switch will change the flame height setting (only from max height to min low) but after the 10 second delay.

The stepper motor will still function on battery back up and full flame adjustment can be made from the remote or using the high/low sliding switch on module. There will still be a 10 second delay before any flame height adjustments can be made.

Aux 1 and Aux 2 will not function in battery backup mode.

Blower will not function on battery back up mode.

It is safe to leave batteries in the battery holder even when operating on normal current from junction box, the batteries will not be drained nor will the system attempt to charge them. However, batteries will lose power when exposed to an area of high temperature for extended periods of time and battery life will shorten.

If a wall switch has been installed it will override the remote. You will want to leave the wall switch in the off position if remote operation is desired.

There is a safe auto shut down built in to the control module for the instance where there has been 9 hours of uninterrupted continuous operation of the appliance. This is not a function of the remote. If using the wall switch—or the remote in the full time “on” mode, unit will only run for 9 hours continuously. (verify the remote control thermostat function and possible bypass).

The remote and thermostat mode will still operate in battery back up mode. No accessory functions will operate off the battery back up.

Transmission of information occurs every 60 seconds in thermostat mode.

Remote must be within 10 meters of module for proper reception and transmission. Transmission is via radio frequency.

Remote program is set as a randomizing function of remote range of available radio frequencies.

Module must be in “remote” setting for wall switch or remote to operate.

A static charge across the LP/NG fuel selector switch in rare instances may cause harm to module. Use a non-conductive or plastic screw driver when interfacing with module selector switch.

For the RC300 (AU), when in thermostat mode, transmission of information happens every 60 seconds. For optimum operation you may need to try different locations for the wireless control.

The RC100 uses CR2032 Batteries

Unit Orifice and Shutter Setting Reference

UNIT	Max Heat (MJ/h)	Orifice DMS	Orifice Metric(mm)	Shutter Setting
350TRSI-AUF	21	#44	2.18	9.5 mm
350TRSILP-AUF	19.8	#55	1.32	11 mm
350TRSILP-AUF (Butane)	17.2	#56	1.18	12.5 mm
550TRSI-AUF	28	#40	2.49	11 mm
550TRSILP-AUF	26	#.057	1.450	Full Open
550TRSILP-AUF (Butane)	20	#55	1.32	Full Open
6TRSI-AUD	36	#33	2.87	12.5
6TRSILP-AUD	34	#51	1.70	Full Open
6TRSILP-AUD (Butane)	29.5	#53	1.51	Full Open
SOHO-N-AUB	14.4	#50	1.78	11 mm
VRT-N-xx-AUB	26.7	#39	2.53	13 mm
VRT-P-xx-AUB	24.5	#.057	1.45	11 mm
XLR-N-AU	26	#42	2.35	2 mm
XLR-PB-AU	26	#.057	1.45	8 mm
XLR-PB-AU (Butane)	22	#55	1.325	Full Open
XLR-N-AU (Logs)	26	#42	2.35	5 mm
XLR-P-AU (Logs)	26	#.057	1.45	11 mm
XLR-PB-AU (Logs) (Butane)	22	#55	1.325	Full Open
ST-HVBI-AUB	44	#30	3.26	13 mm
ST-HVBILP-AUB	42.5	#49	1.85	Full open
GRL-850-AU	60		1.55 (7-hole)	9.5 mm
GRL-850LP-AU	60		2.33	Full Open

Unit Orifice and Shutter Setting Reference

[illegible]

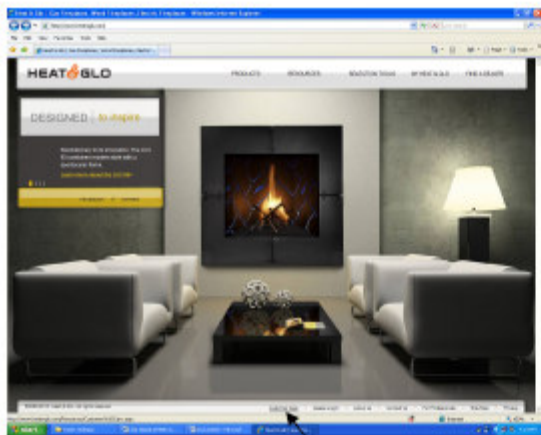
Technical Service Contacts and Information

Website: www.heatnglo.com or fireplaces.com

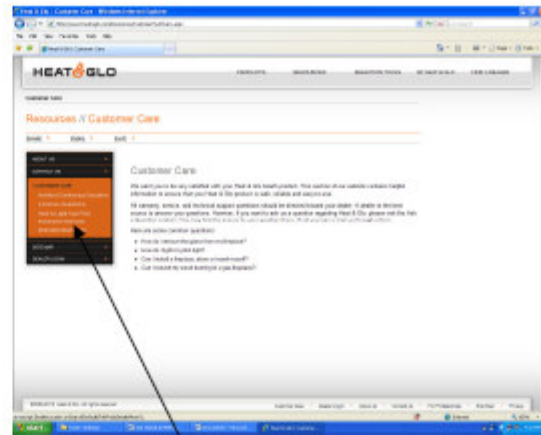
Toll free number:

Technical Service Email:

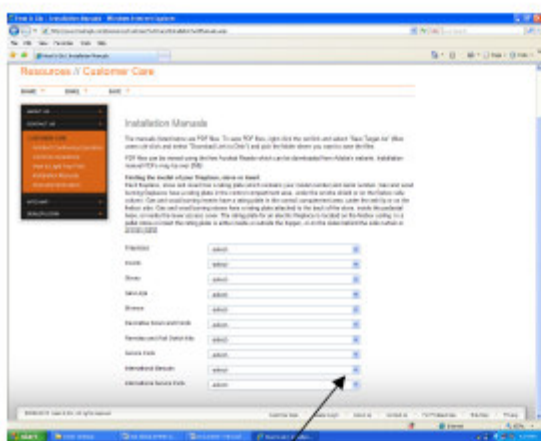
How to access most recent revision manuals:



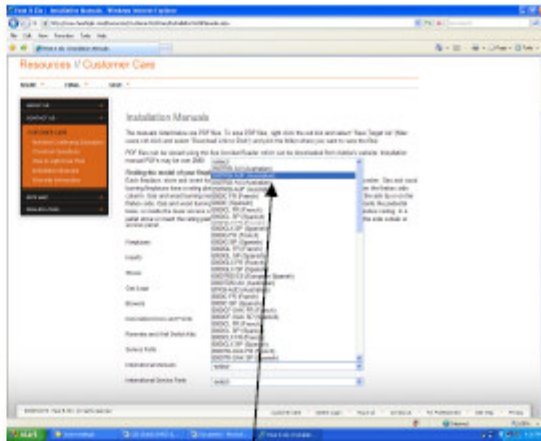
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2. Select Installation Manuals Link under Customer Care toolbox



Select on the arrow of the International Manuals drop down menu.



4. Select the desired manual to start download.